

CLAIMS

What is claimed is:

1. An apparatus, comprising:
 - an insulator having a bottom surface;
 - a pixel array coupled to the bottom surface of the insulator;
 - a conductive structure adjacent to the pixel array; and
 - a first signal generator coupled to the conductive structure.
2. The apparatus of claim 1, wherein the pixel array comprises amorphous silicon (a-Si) transistors.
3. The apparatus of claim 3, wherein the a-Si pixel array is the basis for a thin film transistor ("TFT") flat panel detector.
4. The apparatus of claim 1, wherein the conductive structure is configured to reside underneath a contacting portion of a hand.
5. The apparatus of claim 1, wherein the first signal generator is configured to drive a charge through the insulator.
6. The apparatus of claim 5, wherein the first signal generator generates a pulse.
7. The apparatus of claim 6, wherein the pulse has a negative potential.
8. The apparatus of claim 5, wherein the first signal generator generates a signal that changes its voltage amplitude.
9. The apparatus of claim 1, further comprising:
 - a plurality of electrodes coupled to the insulator; and

a plurality of storage capacitors, each of the plurality of storage capacitors coupled to a corresponding one of the plurality of electrodes; and
 a second signal generator coupled to the plurality of storage capacitors on a side opposite that of the plurality of electrodes.

10. The apparatus of claim 9, wherein the second signal generator is configured to drive a charge directly into the plurality of storage capacitors through the side opposite that of the plurality of electrodes.
11. The apparatus of claim 10, wherein the second signal generator generates a pulse.
12. The apparatus of claim 11, wherein the pulse has a negative potential.
13. The apparatus of claim 9, wherein the second signal generator is configured to drive a first charge through the side opposite that of the plurality of electrodes into the plurality of storage capacitors, and wherein the first signal generator is coupled to the conductive structure to drive a second charge through the insulator.
14. The apparatus of claim 1, wherein the conductive structure surrounds the pixel array.
15. A fingerprint recognition system comprising the apparatus according to claim 1.
16. A method, comprising:
 capacitively coupling a finger with a pixel array, wherein the pixel array comprises:
 an insulator;
 a plurality of electrodes coupled to the insulator; and
 a plurality of storage capacitors, each of the plurality of storage capacitors coupled to a corresponding one of the plurality of electrodes;

driving a first charge through the finger into at least one of the plurality of storage capacitors.

17. The method of claim 16, wherein the first charge is driven through the finger using a first pulse.

18. The method of claim 17, wherein the first pulse has a negative voltage.

19. The method of claim 16, wherein the first charge is driven into a first contact of the storage capacitor coupled to a corresponding electrode.

20. The method of claim 19, further comprising driving a second charge into a second contact of the storage capacitor.

21. The method of claim 20, wherein the second charge is driven directly into the storage capacitor using a pulse.

22. The method of claim 21, wherein the pulse has a negative voltage.

23. The method of claim 17, further comprising driving a second charge into a second contact of the storage capacitor, wherein the second charge is driven directly into the storage capacitor using a second pulse.

24. The method of claim 17, wherein the first pulse has a positive voltage.

25. The method of claim 17, wherein the first pulse has a voltage difference in the approximate range of 0.5V to 1V.

26. An apparatus, comprising:

means for sensing a capacitance of a finger contact with a pixel array having a plurality of storage capacitors; and

means for driving a first charge through the finger into a first contact of at least one of the plurality of storage capacitors.

27. The apparatus of claim 26, further comprising means for driving a second charge into a second contact of the at least one of the plurality of storage capacitors.